

<b>PROGRAMME NAME:</b> B.Sc.(H) Mathematics Sem 3
<b>COURSE NAME:</b> Discrete Mathematics
<b>SEMESTER DURATION:</b> August to December 2023

<b>WEEK</b>	<b>TOPIC(S)</b>	<b>TEACHING METHODOLOGY ADOPTED/CONTINUOUS INTERNAL EVALUATION</b>
1-3	The cardinality of a set, Definition, examples and basic properties of partially ordered sets, Order isomorphisms, Covering relations, Hasse diagrams	Classroom teaching and Practicals using Mathematica
4-5	Dual of an ordered set, Duality principle, Bottom and Top elements, Maximal and minimal elements, Zorn's Lemma, Building new ordered sets, Maps between ordered sets	Classroom teaching/ Evaluation through problem Solving/presentation
6-7	Lattices as ordered sets, Lattices as algebraic structures, Sublattices, Products, Lattice isomorphism	Classroom teaching, Evaluation through quizzes
8-10	Definitions, examples and properties of modular and distributive lattices, The M3-N3 theorem with applications, Complemented lattice, Relatively complemented	Classroom teaching and Practicals using Mathematica

	lattice, Sectionally complemented lattice	
11-12	Boolean algebras, De Morgan's laws, Boolean homomorphism, Representation theorem, Boolean polynomials, Boolean polynomial functions, Equivalence of Boolean polynomials	Classroom teaching Evaluation through quizzes ,surprise test and remedial classes for slow learners
13-14	Disjunctive normal form and conjunctive normal form of Boolean polynomials, Minimal forms of Boolean polynomials, Quine-McCluskey method, Karnaugh diagrams	Classroom teaching and Practicals using Mathematica
15	Switching circuits and applications, Applications of Boolean algebras to logic, set theory and probability theory	Classroom teaching and Practicals using Mathematica
16	Revision and Test	Evaluation through Question and Answer Session